

CLAIMS

What is claimed is:

1. An apparatus for forming the body of a multiple-sided container from a flat pre-scored blank comprising:

5 a. at least one first conveyor defining a path of travel for said blank through said apparatus;

 b. a plurality of plows deployed along said path for folding said blank as said first conveyor moves it along said path such that a first and last panel of said blank are positioned in a parallel spaced relationship to each other;

10 c. an adhesive sprayer located along said path downstream from said plows for applying adhesive to one of said first and last panels;

 d. a separating bar located along said path downstream from said applicator for holding said first and second panels apart after adhesive has been applied;

15 e. at least one alignment conveyor located along said path adjacent to said separating bar that engages a trailing panel of said blank; and

 f. a compression roller located along said path downstream from said separating member and said alignment conveyor for pressing said first and last panels together.

20 2. The apparatus of claim 1 wherein said alignment conveyor engages one of said first and last panels of said blank to bring it into alignment with the other panels of said blank.

 3. The apparatus of claim 1 wherein said alignment conveyor engages one of said first and last panels of said blank to bring said first and last panels into alignment with each other.

25 4. The apparatus of claim 1 wherein said alignment conveyor is at least one continuous belt with a plurality of adjustably positionable cleats located thereon for engagement

with a trailing edge of a panel of said blank, said belt being attached to a motor that is capable of changing speeds to quickly catch up with said first conveyor and thereafter match the speed of said first conveyor.

5 5. The apparatus of claim 4 wherein said first conveyor is at least one motorized pinch belt.

6. The apparatus of claim 1 wherein at least one secondary conveyor is provided along said path downstream from said first conveyor in the vicinity of said separating member
10 wherein said container blank is transferred from said first conveyor to said secondary conveyor as it travels through said apparatus.

7. The apparatus of claim 4 wherein said alignment conveyor is provided above said path.

15 8. An apparatus for forming the body of a multiple-sided container from a flat pre-scored blank comprising:

 a. at least one first conveying means defining a path of travel for said blank through said apparatus;

20 b. a plurality of panel deforming means deployed along said path for folding said blank as said first conveyor moves it along said path such that a first and last panel of said blank are positioned in a parallel spaced relationship to each other;

 c. an applicator means located along said path downstream from said plows for applying adhesive to one of said first and last panels;

25 d. a separating means located along said path downstream from said applicator means for holding said first and second panels apart after adhesive has been applied to one of said first and last panels;

e. at least one moveable alignment means located along said path adjacent to said separating means for engaging a trailing panel of said blank to bring it into alignment with the other panels of said blank; and

f. a compression means located along said path downstream from said separating means and said alignment means for pressing said first and last panels together.

9. The apparatus of claim 8 wherein said alignment means comprises a reciprocating cylinder having an associated contact element for engagement with a panel of said blank to bring it into alignment with the other panels of said blank.

10. The apparatus of claim 8 wherein said alignment means is selected from the group consisting of: a timing belt, a pulsing servo motor attached to a conveyor, a powered wheel and rail system, at least one pinch belt, at least one bottom roller with tabs, adjustably cleated chains, selectably operable suction cups, and a drum system.

11. The apparatus of claim 8 wherein said applicator means comprises a sprayer.

12. The apparatus of claim 8 wherein said separating means is selected from the group consisting of a longitudinal rod and a longitudinal bar.

13. The apparatus of claim 1 wherein said compression means is comprised of a plurality of pressure rollers.

14. A method for forming the body of a multiple-sided container from a flat blank comprising the steps of:

- a. conveying said blank along a formation path through a machine;
- b. folding said blank using a plurality of plows deployed along said path such that a first and last panel of said blank are positioned in a parallel spaced relationship to each other;
- c. applying adhesive to one of said first and last panels;
- d. keeping said first and last panels separated from each other after said adhesive has been applied and while alignment is taking place;
- e. engaging a trailing panel of said blank using an alignment conveyor located along said path to bring said trailing panel into alignment with the other panels of said blank while maintaining separation between said first and last panels; and
- f. compressing said first and last panels together after alignment has been accomplished.

15. The method of claim 14 comprising the additional step of bringing said first and last panels into alignment with each other.

16. The method of claim 14 comprising the additional step of transferring said blank from a first conveyor to a secondary conveyor after it has been folded by said plurality of plows.

17. The method of claim 14 wherein said alignment conveyor causes said trailing panel to catch up with the remaining panels of said blank.